



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,020	12/21/2001	Gin Liu	213202.00355	3692
27160 7590 12/22/2008 KATTEN MUCHIN ROSENMAN LLP (C/O PATENT ADMINISTRATOR) 2900 K STREET NW, SUITE 200 WASHINGTON, DC 20007-5118				
EXAMINER				
GHULAMALL, QUTBUDDIN				
ART UNIT		PAPER NUMBER		
2611				
MAIL DATE		DELIVERY MODE		
12/22/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/024,020

**Applicant(s)**

LIU ET AL.

**Examiner**

Qutbuddin Ghulamali

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 10-16, 31-38, 41, 44-46 and 48-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-16, 31-38, 41, 44-46 and 48-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to remarks/amendment filed 9/23/2008.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-7, 10-16, 31-38, 41, 44-46 and 48-56 have been considered but are moot in view of the new ground(s) of rejection.

The rejection based on newly found art follows.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 10-16, 31-38, 41, 44-46 and 48-56 are rejected under 35 U.S.C. 102 (e) as being anticipated by Milbrandt (USP 7,242,761).

Regarding claims 1, 51, Milbrandt discloses a system and a method of retrieving channel characteristics of digital subscriber lines comprising:  
determining at the tip and ring terminals of a modem input port (modem input commonly known in the art in telephone industry, tip and ring in common connection) (fig. 1,

elements of 12 subscribers) and storing in data registers (memory is composed of registers) on a per bin basis a channel frequency response measurement and a noise measurement measured at initialization at a first end of the DSL (col. 2, lines 33-42, 53-64);  
determining and storing in data registers (memory) on a per bin basis a signal to noise measurement at the first end of digital subscriber line channel; and  
transmitting the channel response and noise measurement from one end to the other end (from central office to subscriber) (col. 4, lines 10-34, 48-67; col. 5, lines 4-10, 20-30, 45-67; col. 6, lines 1-12).

Regarding claims 2, 11, 32 Milbrandt discloses first end can comprise a central office (CO) end, and the second end comprise a customer premise equipment (CPE) end as a manifestation of DSL technology adaptation (col. 1, lines 36-49).

As per claims 3, 6, 12, 15, 33, 36, 53 and 55, Milbrandt discloses the channel is asymmetrical as is inherently implied with the use of ADSL technology (col. 9, lines 15-24).

As per claims 4, 13, 34 these claims are analyzed in a similar fashion as claims 2, 11 and 32 as Milbrandt discloses (transceiver, transmitter to receiver and receiver to transmitter functions (col. 1, lines 45-58).

Regarding claims 5, 14 and 35, Milbrandt discloses the channel is non-overlapping (DMT is non-overlapping is inherently implied) (col. 9, lines 15-55).

As per claims 7, 16, 37 the claims are design related and the xDSL technology can be adapted to a very high bit-rate such as HDSL, VDSL, etc., (col. 9, lines 15-35).

Regarding claims 31, 52 Milbrandt discloses a computer or other computing device encoding a computer program means for execution by computer (col. 4, lines 47-67).

As per claims 38 and 41, the channel response at initialization is a program function which can be programmed to represent a normalized complex number (col. 4, lines 55-67).

Regarding claims 48, 50, 54 and 56, Milbrandt disclose use of ADSL, an asymmetrical subscriber line is one of the xDSL technologies wherein the channel may overlap (cross channel coupling) because of more bandwidth in one direction than the other, typically downstream from the central office (CO) to the subscriber end and inherency is implied with its use (col. 3, lines 15-29).

Regarding claim 49, the channel can be symmetrical is well known in the art disclosed as prior art of the instant application (col. 9, lines 16-35).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 10 rejected under 35 U.S.C. 103 (a) as being unpatentable over Milbrandt (USP 7,242,761).

Regarding claim 10, the steps claimed as apparatus is nothing more than restating the function of the specific components of the method as claimed and therefore, it would have been obvious, to a person of skill in the art at the time of the invention, to utilize steps in forming circuit components so as to achieve the desired results, considering the aforementioned rejection for the method claim 1 above.

7. Claims 44, 45 and 46 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Milbrandt (USP 7,242,761) view of Zuranski et al (USP 6,263,077).

Regarding claim 44, 45, 46, Milbrandt discloses all limitations of the claim. Milbrandt does not explicitly disclose analyzing time dependent changes (noise) in cross talk levels and line attenuation (fading) at the second end of the channel. Zuranski in a similar field of endeavor discloses analyzer (130) analyze time dependent changes (performs spectral analysis, the analyzer performs FFT and can also perform inverse Fourier transformation, in a first frequency range through an equalizer reducing or attenuating cross talk) in cross talk levels and line attenuation (fading) at the second end of the channel (col. 4, lines 1-2, 30-35, 53-67; col. 5, lines 1-12, 30-40; col. 9, lines 25-30, 31-63; col. 13, lines 18-42). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to analyze time dependent changes (noise or cross talk signal to noise ratio) to maintain line attenuation as taught by Zuranski in the system of Milbrandt because it can reduce or mitigate the near and far end cross talk noise from data propagated in data rate upstream or downstream of communication signal.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
December 19, 2008.

/Chieh M Fan/  
Supervisory Patent Examiner, Art Unit 2611